94. PAVING, Tools.

19,399 / 1911

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A.D. 1911. Aug. 31. № 19,399.

COLEMAN'S Complete Specification.

FIG 1

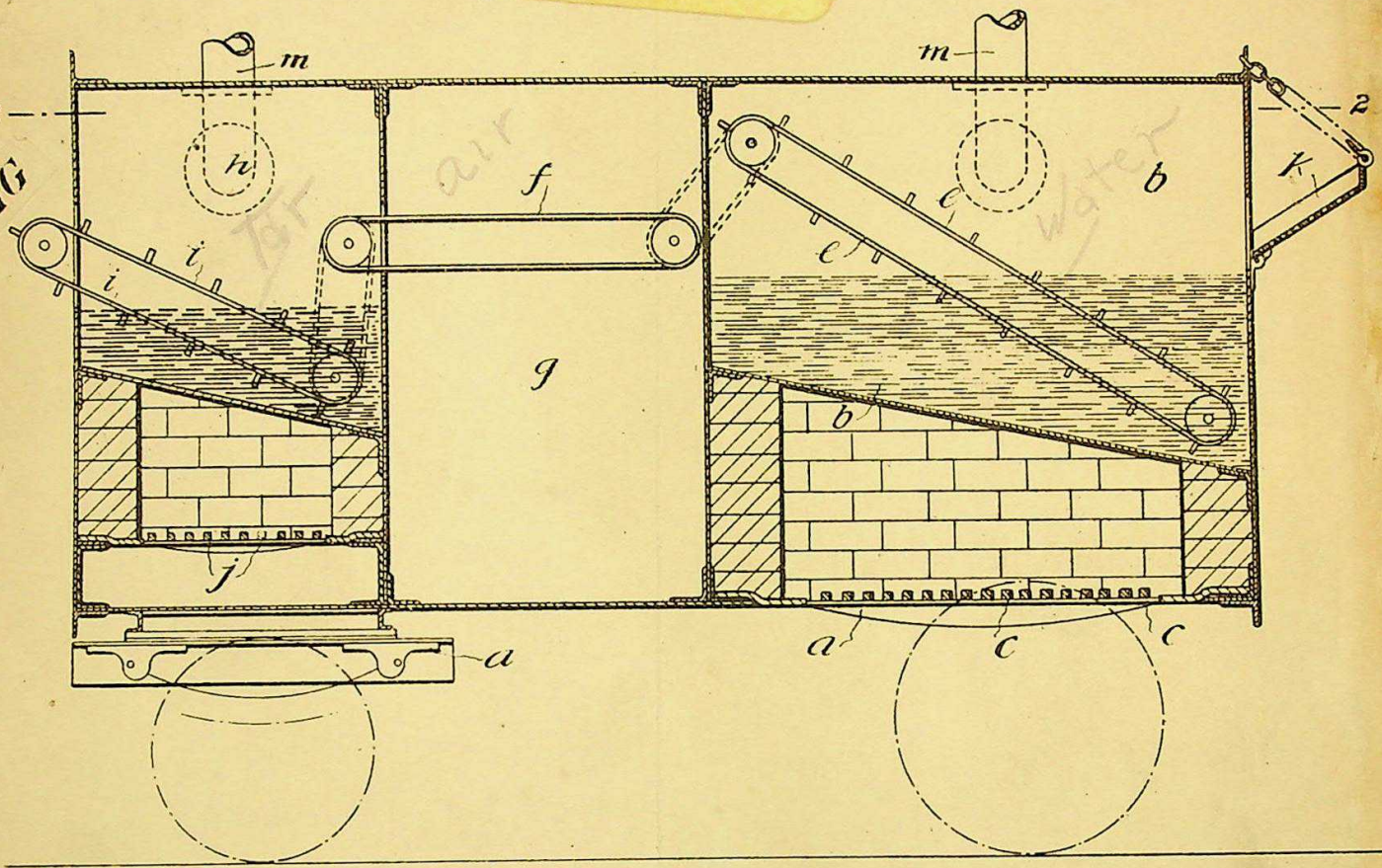
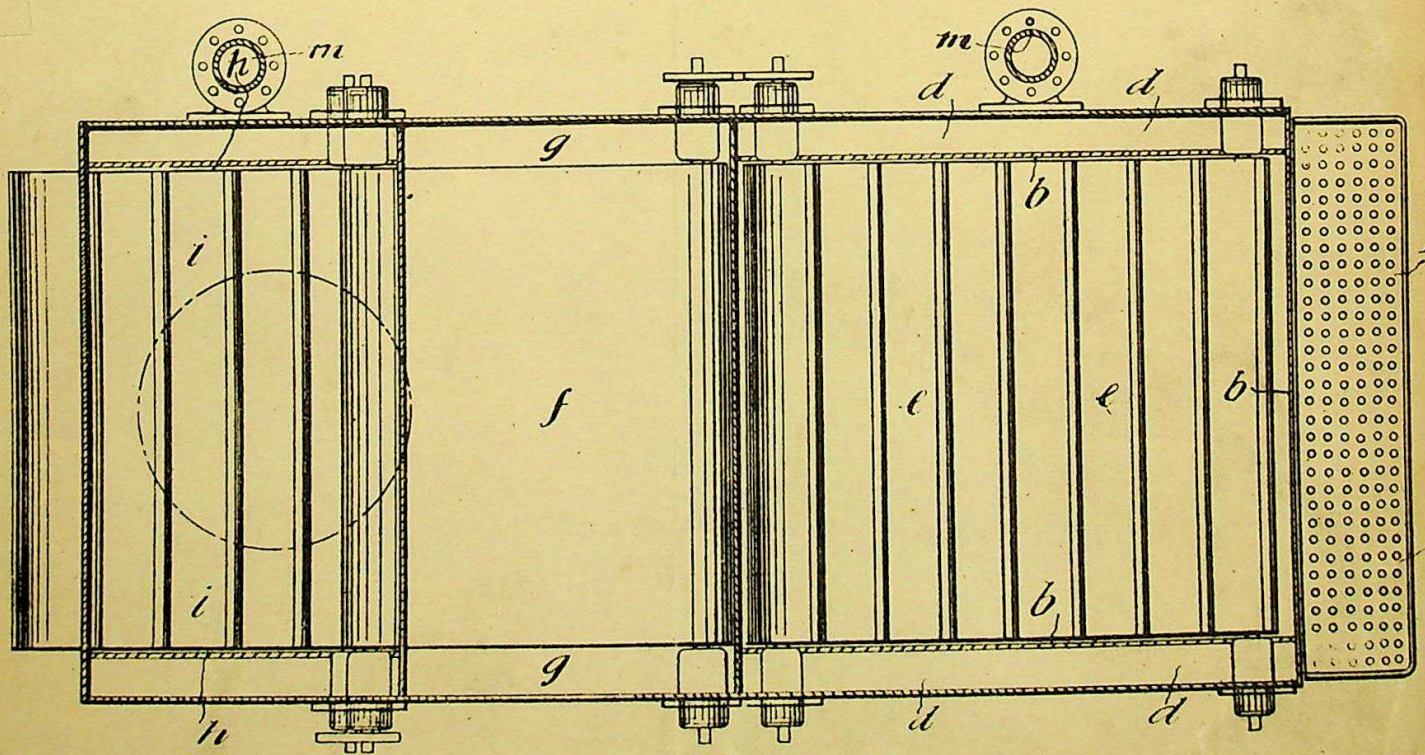


FIG 2



1911

N° 19,399 A.D. 1911

Date of Application, 31st Aug., 1911
Complete Specification Left, 12th Mar., 1912—Accepted, 25th July, 1912

PROVISIONAL SPECIFICATION.

Improvements in the Mode and Means for Treating Stone or other Materials for Making Roads and for other like purposes.

I, THOMAS COLEMAN, of Alfreton Road, Derby, Engineer, do hereby declare the nature of this invention to be as follows:—

This invention comprises improvements in the mode and means for treating stone or other materials for making roads and for other like purposes and has for its object to provide portable means whereby uniform heating and drying of stone or other material is assured, in close proximity to the works being carried out, more speedily and efficiently than has previously been the case.

It has been found in practice that uniform heating of the stone or other material is essential to obtaining uniform roads. Hitherto it has been the practice to dry or heat the stone or other material, used in the preparation of roads, in direct fire heated machines, in which the stone or other material has been allowed to contact with hot plates suitably arranged in the interior of the apparatus. This has been a somewhat tedious process in view of the length of time taken, by the heat radiating from the hot plates and the hot gases from the fire to percolate the mass of stone or other material. Faulty construction of road surface has occurred owing to the liability of the stone or other material to be heated unevenly. The stone or other material in contact with the hot plates being heated to a much higher temperature than that of the stone or other material deposited in the centre of the mass.

In carrying this invention into effect I employ a suitably shaped frame work on which is supported a suitably shaped tank or receptacle capable of containing water or other suitable liquid. Suitable heating means are arranged below the tank or receptacle which latter may be provided with suitable means such as a conveyor for carrying the stone or other material through the tank or receptacle at a uniform speed. The tank or receptacle is provided with suitable charging means whereby stone or other material may be fed onto the conveyor or other carrying means.

In juxtaposition to the tank or receptacle I may provide a suitable air chamber or space having a suitably arranged conveying means arranged to receive the stone or other material discharged from the heating tank or receptacle and convey same at a uniform speed to a further tank or receptacle hereafter termed the coating tank containing the tar compound or other coating material. I provide the coating tank with suitable conveying means arranged to travel at uniform speed and discharge the stone or other material into convenient means of transport such as buckets or barrows. I further provide suitable heating means such as a grate below the coating tank to enable me to heat the coating compound if necessary to maintain the same at a uniform temperature and state of consistency.

As an example I will describe one method of carrying out my invention but it must be understood that I do not confine myself to this method.

I mount a heating tank or receptacle capable of containing water or other suitable liquid and provide suitable means for heating the water or other liquid contained in the heating tank or receptacle such grate having flues preferably

[*Price* 8*d*.]

arranged to pass along the sides of the heating tank. I provide means for carrying the stone or other material through the water or other liquid in the heating tank such as a conveyor arranged to receive the material to be treated on being charged and to carry the same at a uniform speed for a certain distance and deposit the material on a further suitably arranged conveyor, arranged to pass the material through the air chamber or space at a uniform speed. I further arrange a suitably shaped coating tank so that the stone or other material may be discharged from the conveying means arranged within the air chamber or space and deposited onto conveying means arranged to carry the stone or other material at a uniform speed through the coating compound, which coating compound may be heated by a suitably arranged heating means such as a grate arranged thereunder and discharging same.

In operation the water or other suitable liquid in the tank or receptacle is heated to desired temperature preferably boiling point and stone or other material to be treated is fed onto the conveying means by way of a screen, the conveying means being driven at a pre-ascertained uniform speed to allow of uniform heating of the stone or other material. The stone or other material is carried through the water or other suitable liquid. The stone or other material having a certain amount of heat imparted to it is carried on and out the liquid and deposited onto the conveying means arranged within the air chamber or space. Travelling at a uniform speed through the air chamber or space the stone or other material is deposited on to conveying means which latter travelling at uniform speed carries the stone or other material through the coating compound which is kept at uniform state of consistency by heating means arranged thereunder.

To counterbalance the vagaries of the atmospheric conditions the air chamber or space may be heated by passing the hot gases from the flues of the fires arranged to heat the tank or receptacle into the air chamber or space, the temperature in the air chamber or space being kept constant or uniform by the suitable arrangement of grid or damper.

The conveying means may be arranged to travel at suitable speeds in regard each to the other by suitably arranged gear or may have separate motor or other source of driving power.

The conveying means may be detachably connected so as, all or each being removed, to enable the workmen to clear away any sediment which may have accumulated from time to time.

Dated this 30th. day of August, 1911.

THOMAS COLEMAN.

By George Barker,
Fellow of the Chartered Institute of Patent Agents,
77, Colmore Row, Birmingham,
Agent for Applicant.

COMPLETE SPECIFICATION.

Improvements in the Mode and Means for Treating Stone or other Materials for Making Roads and for other like purposes.

I, THOMAS COLEMAN, of Alfreton Road, Derby, Engineer, do hereby declare the nature of my said invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention comprises improvements in the mode and means for treating

stone or other materials for making roads and for other like purposes and has for its object to provide portable means whereby more uniform heating and drying of stone or other material is assured, in close proximity to the work being carried out, more speedily and efficiently than has previously been the case.

It has been found in practice that uniform heating of the stone or other material is essential to obtain uniform roads and hitherto this has been difficult to attain. It has been proposed to produce tarred macadam by heating the stone or gravel in a heated water container divided into two compartments with a passage at the base of one leading to the other, the passage being suitably controlled. The heated gravel was passed through this passage and onto a conveyor working in the other compartment, which conveyor delivered the stone to a pipe or shoot leading to a rotatable tar and stone mixer.

My invention consists in the mode and means of treating stone or other material used in road making, consisting in conveying the material through boiling or approximately boiling water or other suitable liquid and then delivering it onto a conveyor travelling through an air chamber or space or hot gases and then conveying it through hot tar or like coating compound.

I do not make any claim to the use of a conveyor for passing material through hot tar apart from the other steps of my process.

In carrying this invention into effect I employ a suitably shaped frame work on which is supported a tank or receptacle capable of containing water or other suitable liquid. Heating means are arranged below the tank or receptacle which latter may be provided with suitable means such as a conveyor for carrying the stone or other material through the tank or receptacle at a uniform speed. The tank or receptacle is provided with suitable charging means whereby stone or other material may be fed onto the conveyor or other carrying means.

In juxtaposition to the tank or receptacle I provide a suitable air chamber or space having a suitable conveying means arranged to receive the stone or other material discharged from the heating tank or receptacle and convey same at a uniform speed to a further tank or receptacle hereafter termed the coating tank containing the tar compound or other coating material. I provide the coating tank with suitable conveying means arranged to travel at uniform speed and discharge the stone or other material into convenient means of transport such as buckets or barrows. I further provide suitable heating means such as a grate below the coating tank to enable me to heat the coating compound if necessary to maintain the same at a uniform temperature and state of consistency.

In order that my invention may be more easily understood and readily carried into practice I have appended hereunto one sheet of drawings, on which:

Figure 1 shows in diagrammatic form a sectional elevation of the arrangement for carrying out my invention.

Figure 2 is a sectional plan thereof taken on line 2 2 of Figure 1.

On these drawings *a* is the running frame on which I mount a heating tank or receptacle *b*, capable of containing water or other suitable liquid and *c* is the grate provided for heating the contents of the heating tank or receptacle *b*. The flues *d* from the grate *c* are preferably arranged to pass up the two sides of the heating tank to an uptake *m*.

In the interior of the heating tank *b* I provide a conveyor *e* preferably arranged to receive the stone or other material at or near the base of the heating tank *b*. This conveyor is arranged to convey the material to be treated through the water or other suitable liquid at a uniform speed for a certain distance and discharge same onto a further conveyor *f* suitably arranged to traverse at a uniform speed the air chamber or space *g*.

The conveyor *f* is preferably arranged to discharge into a suitably shaped and arranged coating tank *h*; the latter is provided with a conveyor *i* adapted to receive the stone or other material and to carry same at a uniform speed

through the coating compound and discharge the coated materials into convenient receptacles provided to receive same.

A grate *j* is preferably arranged beneath the coating tank *h* and the flues therefrom carried up the sides of the tank to an uptake *m* so as to attain a larger heating surface.

A suitable screening shoot *k* is preferably arranged to feed the stone or other material to be treated into the heating tank *b*.

In operation the water or other suitable liquid in the tank or receptacle *b* is heated by means of a fire in the grate *c* to the desired temperature, preferably boiling point, and stone or other material to be treated is fed into heating tank *b* and onto the conveyor *e* by way of the screen *k*. The conveyor *e* is driven at a pre-ascertained uniform speed to allow of uniform heating of the stone or other material; the stone or other material is carried through the water or other suitable liquid. The stone or other material having a certain amount of heat imparted to it is carried on and out of the liquid and deposited onto the conveyor arranged within the air chamber or space *g*. In travelling at a uniform speed through the air chamber or space *g* the self contained heat of the stone or other material together with the heat of air of other gases in the air chamber serves to drive off any moisture taken up whilst passing through the liquid in the heating tank *b*, and the stone or other material is then deposited onto the conveyor *i* which latter travelling at uniform speed carries the stone or other material through the coating compound which is kept at uniform state of consistency by means of a fire in the grate *j* arranged thereunder.

The conveying means may be arranged to travel at suitable speeds in regard each to the other by suitably arranged gear or may have separate motor or other source of driving power.

The conveyors *e*, *f*, *i*, are preferably detachably mounted in their respective tanks so that all may be readily removed, to enable the workmen to clear away any sediment which may have accumulated from time to time in the tank or chambers.

In some cases where desirable to counterbalance the vagaries of the atmospheric conditions the air chamber or space *g* may be heated by passing the hot gases from the flues *d* of the fires arranged to heat the tank or receptacle *b* into the air chamber or space, the temperature in the air chamber or space being kept constant or uniform by the suitable arrangement of grids or dampers.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1) In the mode and means of treating stone and other materials for road making and other like purposes the process of treating the material consisting in conveying it through boiling or approximately boiling water or other suitable liquid and delivering it into a conveyor travelling through an air chamber or space or through hot gases and then conveying it through hot tar or like coating compound, substantially as and for the purposes described.

2) The mode and means of treating stone and other materials substantially as herein described with reference to the drawing.

Dated this 29th day of February, 1912.

THOMAS COLEMAN.
By George Barker & Brettell,
Chartered Patent Agents,
77, Colmore Row, Birmingham,
Agents for Applicant.

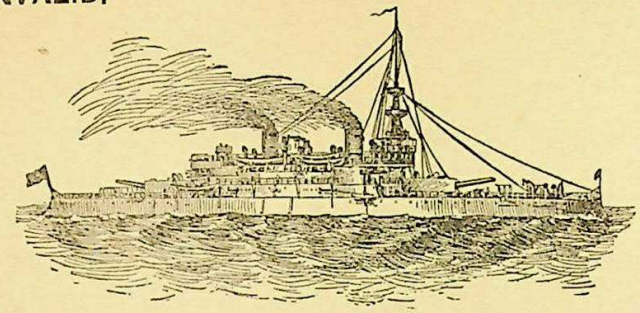
Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1912.

(3-235a.)

War With Spain.

NAVY INVALID.

Cert. No. .....



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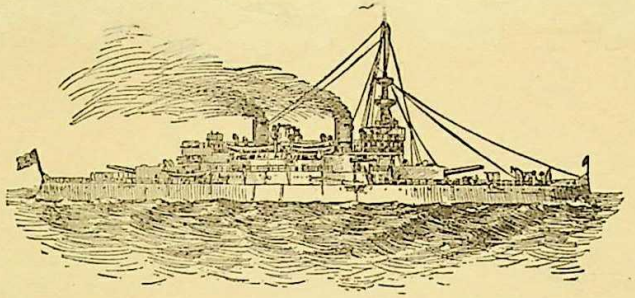

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